



**FAA Contract # DTFAC-06-C-00003**

**Research & Development of  
Commercial Off The Shelf (COTS)  
Health and Usage Monitoring Systems  
(HUMS)  
Ground-Based Station (GBS)  
Assessment and Guidance Development**

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- **Objective:**
  - **Assess a COTS HUMS GBS IAW Advisory Circular AC-29-2C, Section MG-15.**
  
- **Goal:**
  - **Develop and Validate a process for certifying a COTS HUMS GBS for CBM credit.**
  - **Focus is on Independent Verification of a GBS-based Structural Usage algorithm.**
  - **Provide suggested means of compliance based upon actual experience.**

- **HUMS Hardware and Software Functionality Assessment (complete).**
- **Develop COTS Validation Criteria**
  - **Research will concentrate on establishing an independent verification technique for the COTS software portions of the Ground Station while validating the output of a Ground-Station-based Structural Usage algorithm.**
  - **Variation of dissimilar software technique outlined in RTCA/DO-178B.**

- **Parallel Windows- and Linux-Based Software development.**
  - **Identical software, compiled and executed in its respective Operating System, using identical input conditions.**
  - **Deviation in output will determine extent of COTS validation issues.**
- **Develop HUMS COTS Process Guidance**
  - **Will provide guidelines to assist organizations interested in meeting the criteria found in AC-29-2C Section MG-15.**

- **Budget / Expenditures (as of 1/31/07):**
  - **2006: \$ 51,804 / \$ 37,134**
  - **2007: \$ 166,604 / --**
- **Itemized Billings:**
  - **3/27/06: \$12,109 (paid)**
  - **4/29/06: \$4,843 (paid)**
  - **5/10/06: \$8,073 (paid)**
  - **12/14/06: \$12,109 (pending)**

- **Budget / Expenditures (as of 1/31/07):**
  - **2006: \$ 51,804 / \$ 37,134**
  - **2007: \$ 166,604 / --**
- **Notes:**
  - **Total Contract: \$218,408**
  - **Funding to date: \$156,176**
  - **To Be Funded: \$62,232**

- **None.**

- **HUMS Functionality Assessment Completed.**
- **Development Laptop (Dell D820) Arrived.**
  - **Windows XP Pre-installed**
  - **Red Hat Linux to be ordered for parallel development on this machine.**
- **Software Requirements Definition**
  - **Initial Revision of GSCD is drafted.**
  - **Documents SW thru Requirements Definition phase.**



- **None at this time.**

- **Complete Development Laptop Configuration.**
- **Deliver Software Requirements for Structural Usage and Parallel SW Development.**
- **Design and Code SU software.**
- **Construct Verification Suite.**
- **Verify both systems using identical input conditions.**
- **Document Verification Results.**
- **Develop Validation Criteria and COTS Process Guidance resulting from the research.**

- **Questions and Discussion...**

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